EARLY OVARIOTOMY

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A PLEA FOR EARLY OVARIOTOMY.

BY THE SAME AUTHOR.

"On the Pathology of certain so-called Unilocular Ovarian Cysts (Parovarian)."—*Obst. Soc. Lond. Trans.*, vol. xv.

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"On the Use and Abuse of Pessaries."

&c., &c.

A PLEA

FOR

EARLY OVARIOTOMY

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A PLEA FOR EARLY OVARIOTOMY.

Of all the writings on the subject of ovariotomy two works stand out in the greatest prominence. These are the works of Mr. Spencer Wells and the late Dr. Peaslee. On the question I now pro-

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,, 35, seventh line from top, *for* 183 *read* 185.

the organs of the pelvis, abdomen, and chest; so long as heart and lungs, digestive organs, kidneys, bladder, and rectum perform their functions without much disturbance; so long as there is no great emaciation, no very wearying pain, no distressing difficulty in locomotion, or so long as any such injurious influence can be counteracted by ordinary medical care, the patient should be left to that care, undisturbed by any surgical treatment."

The second paragraph deals with the proved uselessness of all medical treatment employed with the "hope of checking the growth of ovarian

cysts and tumours," &c., and does not concern the present enquiry. But he goes on to say in the third, "when, however, an ovarian tumour deforms a patient, or materially impedes locomotion, or interferes with the free action of the heart or lungs, or obstructs the circulation through the large veins in the abdomen, or causes more or less constant and distressing pain, loss of rest, or emaciation, or leads to derangements of the digestive organs, or makes injurious pressure on the contents of the pelvis, surgical aid is required."[1]

Further on he says, "the probable result of ovariotomy can be estimated with far greater accuracy by a knowledge of the general condition of the patient, than by the size and condition of the tumour."[2] A statement with which I cordially agree.

In his more recent Lectures at the College of Surgeons, Mr. Wells, after an interval of six years repeats his advice in these words: "So long as the patient is moderately comfortable, so long as she can walk a mile or for half an hour, without much inconvenience, so long as she can get up and down stairs, so long as there is no great pressure upon any of the organs of the abdomen or pelvis, and she can breathe pretty well, and her heart is not interfered with, such a patient as that may be left to ordinary palliative treatment with the usual at-

[1] *Diseases of the Ovaries*, by T. Spencer Wells, F.R.C.S., pp. 315-6.

[2] *Ibid.*, p. 317.

tention to the general health." Somewhat inconsistently, however, he further on enumerates "certain domestic circumstances," which I need not quote, under which "the surgeon may operate quite legitimately and properly, much earlier than he would if there were no such domestic reason."

On this subject Peaslee enters into a long argument in which he contends for delay, for a variety of reasons too long for quotation, and giving the risk of peritonitis the first place. We shall see how far such an objection is supported by results. He admits, however, as the strongest argument against delay "the assumption that adhesions will be developed, if they do not already exist, and those existing will become more extensive and firmer, and thus the danger will be enhanced." And he sums up his conclusions in these words, "As a general rule, therefore, I conclude that when the general health has become somewhat impaired, and not till then, the time for ovariotomy has arrived."[1]

Peaslee quotes W. L. Atlee, Bradford, Tyler Smith, Erichsen, Nelaton, Nussbaum, and Keith, as advocating this rule. I must, however, except the last named, and add the name of Keith to the list of those who, like Hutchinson, Spiegelberg, Baker Brown and Kœberlé, prefer that the operation should be performed early, and before the general health has become enfeebled.

In a still more recent work, Dr. West, who, for a long time offered this operation strenuous opposi-

[1] *Ovarian Tumours*, by E. Randolph Peaslee, M.D., pp. 345-6.

tion, but has since unreservedly accepted it, sums up as follows.[1]

1st. "It is not to be performed in any case of single cyst which is not increasing, or is increasing but slowly, while it has not as yet interfered with the patient's general health."

2nd. "It is not as a general rule to be performed until after the cyst has been tapped once"(!).....

"*I doubt whether, in the case of simple cysts, ovariotomy ought not to be further limited to cases in which trial has been made of iodine injections sufficient to ascertain them to be inefficacious.*" (The italics are mine).

3rd. "It is not to be performed in any case in which a tumour is felt in the pelvis, retaining the same situation unchanged after tapping, and from which by means of the sound the uterus cannot be distinctly isolated".....

4th. "It is further contra-indicated, though not absolutely by the presence of albumen in the urine, or at any rate by the persistence of any trace of it after tapping, and also by the early occurrence of swelling of the legs, and by the presence of any considerable quantiy of ascitic fluid in the abdominal cavity".....

5th. "And lastly, its success is rendered extremely doubtful by the previous occurrence of cyst inflammation, and general peritonitis as evidenced by attacks of sickness, shivering, fever, and abdominal pain, and by the presence of pus in the fluid evacuated by puncture." To this Dr. Matthews

[1] *Diseases of Women.* West and Duncan, pp. 586-7.

Duncan adds: "Moreover, true, though it may be, that cyst inflammation lessens the chances of recovery after ovariotomy, the recent remarkable experience of Dr. Keith in dealing with suppurating ovarian cysts has led him to think that, other circumstances being not unpropitious, ovariotomy ought to be the rule of practice in cases of acute suppurating cysts, or when typhoid symptoms come on after tapping, in some cases also of burst cyst."

On the other hand it is not contra-indicated:

1st. "By the patient's youth or age, though the young and the old appear to have a better chance than women in middle life, nor by the fact of her having previously undergone several tappings, nor by the irregularity or suppression of the menses," and so on,—conditions that are self-evident and furnish no guide or rule of practice.

2nd. "It is justifiable and to be recommended in all cases of ovarian tumour, provided it is not cancerous, and whether its existence has been of long or short duration, and whether tapping has or has not been frequently resorted to, where the disease is steadily and progressively increasing, and where the patient's health is beginning to suffer from this increase, but as far as can be ascertained from no other cause independent of the local mischief."

I have here quoted at considerable length the conclusions of one of the most eloquent and gifted writers this age has produced, and I cannot be deemed wanting in respect when I hazard the remark that Dr. West has failed to appreciate the

true position of ovariotomy; for there is scarcely a contra-indication that I—that others—have not successfully violated over and over again; and it would indeed be difficult for a beginner, following his instructions, to formulate a rule of practice in any particular case, or decide when he should operate at all.

On this question, Gaillard Thomas says: "It appears to me that the general rule should be this: if a small cyst be discovered which is removable by the vagina,[1] it should be removed as soon as possible, while one too large for this should be interfered with when it is evident that the patient is failing in strength, and becoming emaciated, depressed, and nervous."[2]

In a paper which I published in May, 1879,[3] in speaking of the frequency of adhesions, which were more often met with in the series recorded than they should be, I said, "This is partly due to the unwillingness of patients, in a few cases, to submit to such a serious operation until death almost stares them in the face, but *chiefly to a rule* that has been laid down for the guidance of practitioners, viz., that we should delay operation until the patient is able to accomplish only about a mile of continuous walking. This is, at least, unfortunate, and I am

[1] A mode of operation which has nothing to recommend it in preference to that by abdominal section.

[2] *A Practical Treatise on Diseases of Women*, by T. Gaillard Thomas, M.D., 5th edit., p. 729.

[3] "First Series of 25 Cases of Completed Ovariotomy," *British Medical Journal*, May 24th, 1879.

convinced that early operation would be a safer rule." Further experience has tended to confirm me in this opinion, and I now proceed to state the arguments in favour of the practice I recommend.

The force of this will be almost self-evident, when we put the conclusions of Wells, Peaslee, West, and Thomas into this form, viz.: We should not operate until the tumour does materially interfere with the appearance, prospects, or comfort of the patient, until an injurious pressure is exercised by it on the organs of the pelvis, abdomen, and chest; until the heart and lungs, digestive organs, kidneys, bladder, and rectum, no longer discharge their functions without disturbance, and so on (Wells); or, until the general health has become somewhat impaired (Peaslee); or, in any case.....until the disease has interfered with the patient's general health (West); or, until the patient is failing in strength, and becoming emaciated, depressed, and nervous (Thomas); or, until all other means of relief have failed, and the patient's health is giving way under the extension of the disease. (Erichsen).

I would then lay down the following propositions as more consonant with the first principles of scientific surgery, and as being justified by experience of the operation.

1. We should not wait till the patient's general health has become impaired, or in other words, the principle of such delay is a departure from that generally followed in the case of other diseases treated surgically.

2. The presence of the tumour is the cause of structural disease in other organs.

3. Ovarian tumours are liable to a variety of accidents, such as rupture, either from injury or spontaneously, and twisting of the pedicle, to morbid processes, such as inflammation, atheromatous degeneration of the blood-vessels, which with fatty change in the walls of the cysts leads to hæmorrhages into their interior, &c.

4. The existence of adhesions, of degenerative changes in, and rupture, &c., of the tumour, greatly interferes with the success of the operation.

5. On the contrary, the earlier and simpler the operation the greater is the chance of recovery.

First, then, we should not wait till the patient's health is impaired, or in other words, the principle of such delay is a departure from that generally followed in the case of other diseases treated surgically.

I am not aware that there is any operation in the whole range of surgery, *that must be a matter of necessity sooner or later*, in which it is considered advisable to await this contingency. The surgeon does not advise a patient with stone to wait till the irritation of the bladder extends to the kidneys, and the general health is impaired, before recommending the removal of the stone. Nor is it considered good practice to wait till a woman is exhausted by the fruitless pains of labour, and the pelvic structures have suffered from the effects of prolonged and injurious pressure, before having recourse to

the forceps. And as it is true in the medical world, so is it true in the surgical. In fact the whole tendency of modern surgery, if not of ancient surgery also, is to anticipate this state of impairment, and I need not multiply examples.

We must bear in mind that in ovarian cystoma we have to deal with a disease which, speaking generally, necessarily leads to a fatal result, that there is no tendency to spontaneous cure—by the *Vis Medicatrix Naturæ*—and that the operation can never be one simply of expediency, but rather of necessity. I cannot, therefore, conceive any advice more unfortunate, more unjustifiable, than is contained in the above quotations.

And here I would ask. Has either of the authors above-named reflected on what is meant by impaired health? Surely not. What does the expression mean? It means that the patient has lost flesh and strength, that her appetite has fallen off, her power of digestion has become enfeebled, and that the functions of secretion and excretion are disordered, and the blood consequently deteriorated. It means that her nights are restless and her sleep is disturbed, that the nervous system no longer exerts that controlling force which characterizes health, and that a vicious circle of imperfect nutrition and disordered innervation has been set in motion; and it means, above all, that when the system is called upon for an extra effort, as it is by such an operation as ovariotomy, it is at a time when the vital forces are at their lowest ebb. To

take a familiar illustration one might as well ask that the Oxford and Cambridge crews should, as a preliminary to their race, be obliged to squander that energy which they have been husbanding for the last 48 hours, in useless contention over part of the course, and then, when their powers are already somewhat exhausted, that they should be started on their career, and with the tide against them. Thus, a woman, whose general health is already impaired is in the most unfavourable condition for any operation. And if we want any evidence on the other side, we have it in the well-established fact that prize-fighters used to recover with surprising rapidity even from serious injuries.

2. The presence of the tumour is the cause of structural disease in other organs.

This result may be brought about directly or indirectly. Thus by its pressure a large tumour directly affects the digestive organs, kidneys, ureters, bladder and rectum, as well as the heart and lungs, by interfering with their circulation, &c. Take, for instance, the kidneys. I have seen several well-marked examples of this. In one case, No. 41, age 37, tumour 17lb, the urine contained as much as one-third of albumen previous to the operation, though the sp. gr. and reaction were normal. In three days after the operation the albumen had quite disappeared. In another case, No. 104, age 65, tumour 40lb, the urine was very scanty, sp. gr. 1015, and, previous to a preliminary tapping to relieve urgent symptoms, contained

about one-twentieth of albumen. A few days later, when the albumen had quite disappeared the patient underwent operation with an excellent result. A third case had about one-sixteenth of albumen in the urine, of normal sp. gr., and it disappeared in two days after double ovariotomy. In this case there was already inflammation of the tumour, and recent adhesions, pelvic, &c., necessitating the use of a drainage tube. Quite recently I was obliged to tap a patient, the subject of malignant disease, probably ovarian. The urine was very scanty and high coloured—little more than half a pint in 24 hours. In the first 24 hours after the tapping about 80 ounces of urine were passed. There was nothing but the removal of the pressure to account for this copious diuresis. The same result has been observed at each subsequent tapping.

While I point out that this evidence goes to show that West's 4th contra-indication is only partially tenable, that the *presence* of albumen, even in considerable quantity, is not a contra-indication to operation, but rather an indication that operation is imperatively demanded without further delay, I quite agree with him that the *persistence* of albumen, taking it as *distinct and indubitable evidence of structural disease of the kidneys*, should be regarded as a bar to the operation. But to avoid this is one of the objects of this paper. In every case in which I have met with albuminuria, or with organic disease of the kidneys, the ovarian disease has been of long standing, and it is a fair assumption that, had

the tumour been removed earlier, this result might have been obviated.

Of more serious import are the indirect results, and we may take these same organs for our illustration. It is well known that a low form of inflammatory action, if long continued, sets agoing and keeps up systemic irritation under which these organs, along with others, suffer sooner or later; and this condition is indicated by those signs and symptoms which are comprehended under the expression, "evidence of impaired health." But the most serious aspect of the question is this, that extensive disease may thus exist without any *direct* evidence. Thus, it has happened to me several times to encounter far advanced cirrhosis of the kidneys which proved the source of a fatal result. In neither of these cases did the urine present any indubitable evidence of such a condition except the low sp. gr. (1012 in one). This low sp. gr. in itself affords no certain indication, especially if associated with abundant secretion; for we know that in certain states of the nervous system, as under the excitement preceding an operation, the urine is often very abundant and of low sp. gr. And as with the kidneys, so is it with the liver; and Mr. Doran has borne witness to the frequency with which disease of important viscera is found in cases of death after severe ovariotomy, &c.

A most distressing case recently came under my notice. It was that of a young girl, aged 17. Two years previously, her friends were told to wait till

urgent symptoms set in. When she came under my notice, she was enormously distended, and could only lie on one side, the right. I was obliged to tap her at once, removing 35 pints of fluid. A general examination was now made, and her right pleura was found to contain fluid. It was hoped that the removal of the pressure might lead to the absorption of this fluid. Tapping again became necessary 18 days after (22½ pints), and a week later I had to aspirate the pleura, removing 1¾ pints of fluid. The fluid re-accumulated, and I was obliged, because of her enfeebled condition, to send her home, believing operation under such circumstances to be unjustifiable. She died soon after, and thus illustrated the unwisdom of the advice, which clearly sacrificed a young life in obedience to an unfounded and disastrous theory.

Thus, I believe, my second proposition is sustained.

3. Ovarian tumours are liable to a variety of accidents such as rupture either from injury, or spontaneously, and twisting of the pedicle, to morbid processes, such as inflammation, atheromatous degeneration of the blood vessels, with fatty change in the walls of the cysts, leading to hæmorrhage into their interior, etc.

We know too well that an ovarian tumour is liable to a variety of accidents. The patient may fall or recieve a blow, and the tumour may burst, with what consequences, will depend on the nature of the contents. That this is a matter of very little

consequence in the case of a parovarian cyst, is shown by a case (No. 107), which came under my care from Canada, in Jan. 1880. In the preceding month the abdomen was very much distended—to nearly 50 inches in circumference. While coming downstairs, she slipped and fell, hurting herself considerably. On getting into bed, she observed that the shape of her abdomen was much altered, and she soon began to decrease in size, co-incident with a large excretion of urine; on her arrival in this country after an interval of about 6 weeks, there was very little or no free fluid, the cyst was refilling and now was of moderate size, and flaccid. At the operation on Feb. 5, 1880, the site of the rent was visible, but there was no longer a communication between the cyst and peritoneum.

In this case, the fluid was unirritating, and was rapidly taken up by the peritoneum and passed off by the kidneys. Very different, however, is it, when rupture of a true ovarian tumour occurs. In such a case, the fluid is always more or less irritating; adhesive peritonitis is set up, and then we get a complicated case. In one of my early cases[1] (No. 15), rupture occurred while the patient was in the Hospital awaiting operation. In two days her life was in great danger. The symptoms, however, slowly subsided, and in three weeks' time, I thought I might risk operation. The tumour was universally adherent, *i.e.*, to everything in apposi-

[1] This case and the next are reported in detail in my paper "On Drainage in Ovariotomy."

tion; the colon, very much distended, adhered to the tumour, parietes, and neighbouring intestines, and passed diagonally from right to left downwards, and the intestines were matted together where they touched the tumour; the rest of the peritoneum was perfectly healthy. At the bottom of the pouch thus formed, resembling the inside of a cocoa-nut shell, there was a handful of colloid matter. Thanks to the drainage tube, the patient made a good recovery. The sequel of this case is worth stating, and it is that she has since got married, and given birth to a fine girl, after a most favourable pregnancy and confinement. How such a thing has happened passes my comprehension, when I reflect on the state of the parts at the time of operation. In another case (No. 9), the tumour burst a few hours before the time fixed for operation, and although there resulted considerable pain and tenderness, with pyrexia, I thought it best to operate at once, and I did so with the happiest result.

This accident of rupture, is especially apt to occur in the case of colloid cysts, in which, as a rule, the cyst wall is of great delicacy; and it may take place when the tumour is yet of very small size. In case 94, both ovaries were affected; the left weighed about 12lb., and the right was of the size of a walnut, and was an exact miniature repetition of the larger one, as to rupture into the peritoneum and inter-communication of cysts. So common is rupture in these cases, that I am unable

to recall more than one instance, out of the many I have had, in which it had not occurred.

Independently of any injury or spontaneous rupture, the tumour is liable to become the seat of inflammatory action, which, at the least, ends in adhesions; No. 70 is a good illustration of this. The case is as follows:—Mrs. H., æt. 39, was sent to me by Dr. Colbeck, of Dover, in Jan., 1879. I then diagnosed an ovarian tumour of about 15lb., and as it was freely movable, and the patient's health very good, I urged her to have it removed without delay. She was a very nervous woman, and she so strenuously objected, that I was obliged to let her return home. In March she returned. For a month or more previously she had complained of pain and tenderness. The tumour had now increased to 26lb. Here, the operation, to which I had now no difficulty in getting her assent, was, in addition to being double, complicated by abundant recent parietal adhesions. She, however, made a good recovery.

Even while I am writing, I have a most interesting case of this kind under observation. It is that of a lady, æt. 33, who for a year or two had been known to be the subject of a small ovarian tumour, the existence of which had been verified by aspiration. I had repeatedly recommended its removal, but circumstances were inconvenient and nothing was done. Quite recently, attending her for symptoms unconnected with the tumour, which, although always the seat of more or less discomfort, had not

grown much in the last 12 months. I strongly urged its removal, at the same time hazarding the prediction that unless removed soon, it would probably become the seat of serious mischief. That same evening the patient began to complain of pain, and she is now, after several weeks, only recovering from a very severe attack of inflammatory mischief. The tumour, previously quite free, has now probably become adherent, and is beginning sensibly to enlarge; and it is disappointing to find that a very simple case has, by delay, been allowed to assume a very serious aspect.

(Since the above has been in type I have performed ovariotomy in this case. The diagnosis was confirmed as to the existence of inflammation of the cyst with adhesions, parietal, omental, intestinal, and pelvic. The result has been a very rapid recovery).

But there is a much more formidable change, more formidable, because more insidious, viz., a process of degeneration in the walls of the blood-vessels and tumour, which too surely leads to mischief of the direst kind. Thus, fatty or atheromatous change takes place in the walls of the arteries, the vessels become blocked, and the parts supplied, deprived of their due nutrition, lose their vitality, so that we find them presenting a dirty whitish or brownish appearance, like wet brown paper, from fatty degeneration of the tissues. In such cases, if rupture into the peritoneum—as frequently happens, and as I have often seen—do not take place,

a process bordering on inflammation is set up, and the tumour contracts adhesions, through which, by a beneficent arrangement of nature, the vitality of the parts is just maintained, though at a very low ebb. The following case illustrates this condition of fatty degeneration before the access of inflammation.

Miss B., æt. 51, came under my notice in May 1880. She stated that she had been ailing for about 2 years, and that although she had noticed that her abdomen was larger than it used to be, she was not aware that she had a tumour till a few weeks previously; I estimated her tumour at something between 8 and 10lb., and advised her to have it removed without delay, urging that she would never be in a more favourable condition as regarded the tumour, but might be in a much worse by delay. To this she assented, although contrary to the advice of a very high authority, who recommended her to *wait a year*. I operated on her in June 1880, with complete success, and the examination of the tumour proved the wisdom of this course. The largest cyst contained a thickish viscid fluid, of a dark coffee colour, the result of hæmorrhage into it. This hæmorrhage was due to the fatty degeneration of which I have just spoken, and the site and extent could be plainly seen on the most cursory inspection, by the aid of transmitted light. Had this patient been allowed to go on for another year, she must certainly have had some inflammatory action set up, resulting in adhesions, if

nothing worse happened, and instead of a perfectly simple operation, there would have been a complicated one. It is this fatty degeneration of the blood-vessels that is the cause of those hæmorrhages into the cyst, which are so often met with in tumours of long standing. The contents vary from a dark coffee-coloured fluid, to almost solid coagulum, or blood in various stages of decoloration. The symptoms usually tell us when the hæmorrhage, if severe, has taken place, for it is indicated by sharp pain, often accompanied by sickness and faintness, and followed by tenderness. Such tumours are, in my experience, invariably adherent.

Another danger arises from the twisting of the tumour on its pedicle. This happens chiefly in the case of small tumours with a long and narrow pedicle. It is unnecessary, and would here be out of place, to discuss the causes of this accident, of which Mr. Lawson Tait and others have hazarded an explanation. Sufficient for my argument, that it is a source of danger to a woman carrying a small ovarian tumour. I believe the twisting is usually a very slow process, and that it is not until strangulation of the veins occurs that symptoms set in. As the tumour twists upon its pedicle, the venous circulation is retarded more than the arterial. Hence congestion. Under this tension, which may be aggravated by various causes, and especially by straining, a vessel perhaps already in a state of atheroma or fatty degeneration of its walls gives way on the inner

aspect of the cyst wall, and hæmorrhage more or less severe follows. Such a hæmorrhage has proved fatal by reason of its severity, in a few hours, the patient passing into a state of collapse; but more frequently it has been followed by symptoms of inflammation, or localized peritonitis. And when you come to operate on such a case, you find the tumour as a rule universally adherent, and, in fact, deriving its nutrition through the adhesions. In every case of twisted pedicle in my practice, the adhesions have been more or less troublesome, and their extent has been proportionate to the amount of twisting.

The following case, one of many similar, illustrates what I have just been saying. Mrs. B., æt. 39, came under my notice in January 1880. She had been ailing for about six years, from the presence of a small tumour in the hypogastrium, which had been variously diagnosed as pregnancy, uterine fibroid and ovarian tumour. For the last year or two, she had suffered a great deal from pain and tenderness, at times confining her to bed, and on one occasion, presenting all the evidence of localized peritonitis. She had now become anxious about it, and especially because of the more or less constant pain from which she suffered, and she consulted me on the recommendation of my colleague, Dr. Rogers. Although the tumour had not grown perceptibly for the last two or three years, and was even now of very small size (under 2lb), yet taking into account the history of the case, and the exist-

ing pain and tenderness, I had no hesitation in strongly urging her to have the tumour removed. In this, Dr. Rogers concurred, and the patient consented. I accordingly operated on her in Feb. 1880. The tumour was found universally adherent to, and almost enveloped in, omentum; the walls were in the condition above described, the contents were hæmorrhagic, and the pedicle cord-like. The operation was justified by the state of the tumour, and not merely by an excellent recovery.

Cases like this, and they are numerous, demonstrate the proposition that we should pay little or no heed to the size alone of the tumour, but should be guided by the history of the case. As a rule those tumours that twist on their pedicle are small, and after the twisting has attained the degree it did in the above, usually decrease somewhat in size. This fact, while it induces the patient to object to operation, should lead the operator all the more to urge it. For it must not be assumed that because the tumour has decreased in size, therefore, it has become harmless.

In his fifth contra-indication, Dr. West says, "the success of the operation is rendered extremely doubtful by the previous occurrence of cyst inflammation and general peritonitis," etc. To this Dr. Matthews Duncan adds, "true though it may be, that cyst inflammation lessens the chances of recovery after ovariotomy, the recent remarkable experience of Keith, in dealing with suppurating

ovarian cysts,[1] has led him to think that, other circumstances being unpropitious, ovariotomy ought to be the rule of practice in cases of acute suppurating systs, or when typhoid symptoms come on after tapping, in some cases also of burst cyst."[2] In support of Keith's contention, the following case may be quoted.

Mrs. P., æt. 35, came under my care in the beginning of August, 1879. She had then considerable pyrexia, with abdominal tenderness, and a freely fluctuating tumour under 15℔. It was not then convenient to operate on her, and she had to return home. A fortnight later, her condition was such that I was compelled to aspirate the cyst, thereby relieving her of 12 pints of a very offensive purulent fluid. This was followed by great relief of the general constitutional disturbance, and enabled her to go on till the re-opening of the Hospital, after the annual cleaning. On her re-admission, Sept. 29, 1879, the temperature was 100·2°, the cyst had refilled, there was still some tenderness, and she had a troublesome cough, with expectoration of thick phlegm, and large mucus râles posteriorly. I operated on her on Oct. 2nd. The tumour was universally adherent to the parietes, to the intestines and pelvic peritoneum, and largely to the omentum, which, when separated, required 6 or 7 ligatures. The contents were of the same offensive character as before. The pedicle

[1] *Edin. Med. Jour.*, Feb., and *Lancet*, March 10th, 1877.

[2] Ibid. p. 587.

was thick and broad, and very short, encroaching on the sigmoid flexure, from which it had to be separated by partial enucleation. Here several fine ligatures were required. The pedicle itself was secured by 5 ligatures. After thoroughly sponging out the peritoneal cavity, and finding considerable oozing going on, I put in a 7 inch glass drainage tube. The operation lasted an hour and a half. For 10 hours the temperature did not exceed 99°; it then began to rise, until in 7 hours more it stood at 102·4°, co-incident with dryness of the skin. The ice-cap was then put on. From this time, the temperature steadily fell, so that within 48 hours more it was normal. Thus, it continued until her convalescence was assured. The drainage tube gave exit in thirty-six hours to a much smaller amount of bloody serum than I had anticipated, viz., 1½ ounces. The patient went to a Convalescent Home on the twentieth day. In this case no avoidable delay was incurred, and despite the unfavourable nature of the case, a successful result was obtained.

In another case—which does not appear in my tables, as the operation could not be completed—after emptying the cyst of its terribly offensive contents, and breaking down a few small loculi at the bottom, and separating the parietal and intestinal adhesions, and some of the pelvic, I was obliged to desist, owing to the friable nature of the cyst-wall, and because a partial removal of the cyst would have held out little or no prospect of re-

covery. I then stitched the cyst walls to the parietes, and drained the sac. The result was ultimately a complete success.

Very different from these, on the other hand, is the following:—Mrs. J., æt. 34, came under my notice at the end of June, 1879. Three months previously she had consulted an eminent gynæcologist. At that time she was considerably distended, the pelvis was well filled by the tumour, which even then had descended so far as to bulge the perinæum. Chiefly in consequence of this latter condition, she was advised that an operation would be useless. About a fortnight before my visit, her state had become so distressing that her medical attendant felt called upon to tap her. This gave partial relief, but symptoms of irritative fever had become marked. In this condition I was asked to see her. I did not fail to make everyone concerned acquainted with the extreme gravity of the case, that, if nothing were done, death must very soon terminate the scene, but that there was just a shadow of a chance for her, and that, at the worst, an operation could not hurry the end but by a few days. The patient and her friends elected to have the operation done, and I accordingly operated on June 6th, 1879. The night before the operation the poor patient was so ill that the nurse did not expect her to live till the morning. At the time of operation (2.30 p.m.), the pulse was 140. There were some parietal, omental, and pelvic adhesions to the large tumour, which sprung

from the left side by a very broad and short pedicle. The pedicle was tied in five divisions, and afterwards had two more ligatures applied. The pelvis was now found blocked up by a smaller tumour, which had no adhesions and sprung from the right side of a pedicle about 1½ inches long and easily secured by a double transfixing ligature with a final circular one. It was this tumour that, held and pressed down by the other, depressed the perinæum like the head of the child in the second stage of labour. The operation lasted 90 minutes, and, as might have been expected, was followed by very pronounced shock—the pulse mounting to 150, and the respirations to 50. Suffice it to say, that the patient struggled hard for five days, giving rise to alternate hope and fear, but finally succumbed. I have not the slightest doubt that had the patient been operated on three months previously, and before her health had become so impaired, the result would have been successful.

Here I would remark that we are not to be deterred from operating, as West recommends, because "the tumour is felt in the pelvis, retaining the same situation, but little changed after tapping, and from which, by means of the sound, the uterus cannot be distinctly isolated." Nor even in those cases in which not only is the tumour to be felt in the pelvis, but the uterus is actually drawn up out of it, owing to the close connection between the uterus and the tumour. I have seen many in-

stances of this, too numerous to mention, followed by a successful result, that I feel bound to urge operation, at least to the extent of exploration by abdominal section rather than tapping.

Who, that has had any extended experience of this operation, has not seen cases, far too numerous, in which the patient has been allowed to go on, as in the last mentioned instance, until the operation has become "a forlorn hope?" I can, unfortunately, quote too many instances of this. My very first case was a very striking instance. The patient, who was the subject of rheumatic cardiac disease, with some chronic bronchitis, had been tapped seven times, the last time by myself, to give temporary relief while giving the patient time to make up her mind. There were extensive adhesions, parietal, visceral, and pelvic; yet the result was a success. Within the last year, I have had several cases of the most distressing kind. In one, the patient was so ill on admission, that operation was out of the question, and she died in three to four days. In this case the disease had been recognised for two years. In two, the disease had been of long standing, adhesions were universal, and the patients died from the shock in ten and twenty minutes respectively. Two patients died (on the table), before the completion of the operation,—one being moribund at the time of operation, which was done against my own judgment. Another patient had been tapped fifteen times, and she also died of shock. In my earlier days

such cases would have been left unfinished, but I never leave off now so long as the patient is breathing; for while there is life there is hope, as some of my cases have proved; whereas, an incomplete operation, especially in the case of a large multilocular tumour, with partial removal, means certain death. My 161st case is an admirable instance of this. The patient was emaciated to an extreme degree, from inflammation and suppuration of the tumour; the adhesions were universal, and the operation lasted 70 minutes; there was considerable shock, the pulse rose to 160 within the first eighteen hours, but her face, especially the nose and ears, continued warm, and she made an excellent recovery. Such a result is an encouragement to proceed even under the most unpromising circumstances.

If this argument apply in the case of single women, how much more forcible must it be in the case of the married who are liable to the contingency of pregnancy! And although the results of ovariotomy during the pregnant state are wonderfully satisfactory, yet, I imagine, one would not willingly allow pregnancy to occur in a woman who is already the subject of an ovarian tumour. Several cases have come under my notice in which an ovarian tumour and pregnancy have co-existed, and in which the labour has been followed by symptoms of inflammatory mischief in the tumour, probably due to mechanical irritation. The most remarkable is the following:

Mrs. W., æt. 18, was admitted under my care into the Samaritan Free Hospital, on December 17th, 1875, on the recommendation of Dr. Archer, of Wandsworth. In her second confinement on the 30th of October, the labour was rather tedious. "On the third or fourth day she began to complain of pain, not very urgent, at epigastrium, tongue coated with white fur, but not dry, pulse 120, bowels constipated, temperature in axilla, 101·2°." In a few days more the temperature rose to 104°, and the pulse to 130. By the 5th of December the distension of the abdomen had become so great that recourse was had to tapping (performed by Dr. Jeaffreson) and 16 pints of a thin sero-purulent fluid were removed. On her admission into the hospital 12 days later, the pulse was 144 and the temperature 102·6°. On examination the abdomen was moderately distended (to 40 inches in circumference—she was a very large woman) by a tumour which freely fluctuated and evidently contained air. The presence of air was ascertained by the usual physical signs such as resonance, always superior, and metallic tinkling. After consultation with Mr. Spencer Wells and Dr. Savage I tapped the main cyst, in the presence of Dr. Archer, and drew off 12 pints of what looked like the most laudable pus without any mal-odour or signs of putrefaction. When the cyst was emptied I replaced the patient on her back, and by means of a flexible catheter with india-rubber tubing attached, I injected, by syphon action, five pints of a weak solution of

iodine which was allowed to remain a few minutes and was then drawn off again. At that time the temperature ranged from 97·6° in the morning, to 102·6° in the evening, and the pulse ran steadily at 144; but after the tapping the temperature never exceeded 100, though the pulse maintained the same rate. She returned home on January 5th, 1876, with a hard tumour, as large as a full-sized human head. I saw her again in June in excellent health, and for the last time about twelve months afterwards (I have mislaid the exact date) when she was in the fourth or fifth month of pregnancy, and the tumour about the same size. I have since heard that she died rather suddenly, apparently from something connected with the tumour. Such a case should not be allowed to go on without ovariotomy. I did recommend her to have the tumour removed before the pregnancy had occurred, but not with the force of argument with which I should now urge it. The patient would not consent. With increased experience I now regard the tapping as a mistake, and am of opinion that ovariotomy should have been preferred. It was then thought, however, that the high temperature, the quick pulse, and the presence of air in the cyst, were sure indications of decomposition of the contents, and that extirpation under such circumstances would be only courting disaster. So much for the theory which seeks to explain unfavourable results under the antiseptic system, or Listerism, by the assumption

that by the introduction of septic germs, in the operation of tapping, the patient's system becomes infected and strict antisepsis is thereby rendered impossible. It is a theory without an atom of foundation, and explodes with the system which gave it birth. For if the contents of a cyst having no communication with the external air may become putrid and highly offensive (see case, p. 22-3) while the contents of one into which atmospheric (probably germ-laden) air has actually entered and been confined, present no evidence of putrefaction, we must look elsewhere for a rational explanation, not one constructed to bolster up a preconceived hypothesis. It is one thing, and a legitimate proceeding, to construct a theory on ascertained facts, but it is quite another thing to seek out facts to fit hypothesis.

I repeat then, it was a mistake to tap this patient instead of performing ovariotomy.

In several other cases I have performed ovariotomy soon after the termination of pregnancy. In the greater number the labour was followed by pain, tenderness, and rapid enlargement of the tumour, and in all the adhesions were more or less troublesome.

How much better then must it be to remove the tumour at an early date, and before the occurrence of pregnancy, than to run the risk of having to operate during this state, or after an attack of inflammatory mischief has resulted from the mechanical injury inflicted during the process of parturition!

4. The existence of adhesions, degenerative changes in, and rupture etc. of the tumour, greatly interfere with the success of the operation.

This proposition is admitted on all sides. Having given examples of these conditions in detail, we may now review the general results of operation in statistical form. Thus, Wells, calculating the results of his first 500 cases, says:—"In 296 cases there were no adhesions, or they were so slight as to be almost unnoticed; of these patients 237 recovered and 59 died—the mortality being 19·93 per cent. In 204 cases, adhesions were very extensive; of these patients 136 recovered and 68 died—a mortality of 33·33 per cent. This would show that the mortality of cases where there are considerable adhesions, is about 13 per cent. greater than in cases where there are no, or only trifling adhesions."[1] I have gone over Mr. Wells's table again, and am at a loss to know how the calculation has been made, for I find that 311 are noted as presenting adhesions, instead of 204 as above: of these 90 died—a mortality of 28·93 per cent.; while 189 presented no adhesions: of these 38 died—a mortality of 20·11 per cent. This gives a difference of only 8·32 per cent. In his next 300 cases there are 52 deaths out of 172 with adhesions —a mortality of 30·28 per cent., against 25 out of 128 in cases without adhesions—a mortality of 19·53 per cent. And in his last 200 cases there

[1] *Op. cit.*, p. 319.

are 23 deaths out of 116 with adhesions—a mortality of 19·82 per cent., against 5 out of 84 without adhesions—a mortality of 5·95 per cent., thus giving a difference of 13·87 per cent.—a very near approach to his first calculation.

The following table presents this at a glance:—

Table of 1000 *Cases in Mr. Wells's Practice.*

			Deaths.	Percentage.	Difference.
500	Adhesions.	311	90	28·93	8·82 p. c.
	No Adhesions.	189	38	20·11	
300	Adhesions.	172	52	30·28	10·75 p. c.
	No Adhesions.	128	25	19·53	
200	Adhesions.	116	23	19·82	13.87 p. c.
	No Adhesions.	84	5	5·95	
Totals	Adhesions.	599	165	27·54	10·59 p. c.
	No Adhesions.	401	68	16·95	

Thus it is seen that in Mr. Wells's later experience the non-adhesion cases have recovered in much larger proportion.

My own practice exhibits still more striking results; thus, of 185 cases the proportions are as follows, viz., 125 cases with adhesions, of which 100 recovered and 25 died—a mortality of 20 per cent.; while of 60 cases without adhesions only 3 died—giving a mortality of only 5 per cent., equal to a difference of 15·30 per cent., as will be seen more readily in this

Table of 185 *Cases in my own Practice.*

		Deaths.	Percentage.	Difference.
Adhesions.	125	25	20·10	15·10 p. c.
No Adhesions.	60	3	5·0	

When it is remembered that the figures referring to the cases with adhesions include all those in which the adhesions were very slight, and that these go to render the results favourable, that the more severe cases furnish the great majority of deaths, and that to these are to be added all cases of incomplete operation, as well as those refused operation because of the extent of the adhesions, the importance of the subject will at once be evident. That the nature and site of the adhesions make a difference is also generally admitted; thus intestinal and pelvic and visceral are more serious than parietal and omental of the same degree. This is shewn by some tables compiled by Peaslee: thus according to Mr. J. Clay's statistics of those who had

No adhesions	30	per cent.	died.
Slight adhesions	40	,,	,,
Extensive adhesions	50	,,	,,
Extensive adhesions requiring ligatures	70	,,	,,[1]

In Kœberlé's table including his first 69 cases, we find that of those who had

No adhesions	15	per cent.	died.
Slight adhesions	19·8	,,	,,
Grave adhesions	45·5	,,	,,

[1] *Op. cit.*, p. 877.

And in 450 ovariotomies the following results are obtained:

No adhesions	16·1 per cent.
Parietal	16 „
Omental	33·3 „
Parietal and Omental	28·8 „
Intestinal and Omental, or Parietal and Mesenteric	45·1 „
Pelvic and Intestinal	36·4 „

That the mortality should have reached the high figure of 16 per cent. in non-adhesion cases is explained by the want of that attention to details which now characterizes the operation in skilled hands, and cannot occur again.

I am quite prepared to endorse Kœberlé's statement—one which, in the opinion of Peaslee, "needs qualification," viz., that "ninety per cent. of the cases without adhesions ought to recover." I believe we may confidently look for a still more favourable result than that.

Any classification of adhesions that may be constructed will be open to objection, for it is impossible to draw the line between slight and grave adhesions. Perhaps a better test of the gravity of the adhesions (which is after all of more importance than the site) may be obtained by the time taken in performing the operation. The late Sir James Simpson was wont to lay great stress on the danger of delay in parturition, and he formulated a rule that the mortality in childbed increased with the duration of the parturient process. The same may

be said of ovariotomy, so that we may lay it down as a rule, that the longer the operation the greater the danger. This is synonymous with saying that the more extensive and the firmer are the adhesions the greater is the danger, and it is well shewn in the following table from my own practice.

Table showing the duration of operation in 183 *cases with the mortality.*

Time occupied.	Cases.	Deaths.	Percentage.
Up to 60 min.	137	12	8·0
60 to 80 ,,	29	6	20·6
80 to 100 ,,	10	5	50·
Over 100 ,,	9	5	55·5.

How important it is, then, that cases should be submitted to operation before adhesions have formed! I need not further insist on a proposition that is so evident.

5. The simpler the operation, the greater is the chance of recovery.

The accumulated experience of every operator, and of all operators, tends to a complete demonstration of the truth of this proposition, and I might rest content with having furnished the evidence I have just presented, as to the influence of adhesions on the mortality—evidence which proves to demonstration, that the greater the difficulties of the operation, the greater is the danger. The corollary of this, then, is my proposition. But it is necessary to combat a pernicious theory which still holds its ground to a large extent, or is ex-

plained away in a peculiar manner. It is only in very recent years that the peritoneum has ceased to be the bug-bear of abdominal surgery, and it was sought to explain the comparative immunity from disaster in the case of ovariotomy, by the theory that the mechanical effect of the presence of a tumour within the peritoneum is a greater tolerance of interference on the part of that membrane. This is a theory that is not only unsupported by an atom of experience, but is disproved by the results obtained in simple cases, as above shown; by the results of the operation for strangulated hernia; by the operation of oöphorectomy for fibroid tumours of the uterus; and more recently by the remarkable experience of Dr. E. Vincent, of Lyons, in artificial wounds of the bladder.

On this subject, Peaslee quotes with approbation a statement made by W. L. Atlee, that "peritonitis is less likely to occur in these cases (*i.e.* of adhesions) than when the peritoneum is wholly intact." As already hinted at, this appears to be a pretty general opinion; for quite recently a distinguished surgeon, in a conversation with me on the tolerance of interference manifested by serous membranes generally, and when I instanced the success of ovariotomy, said, "Yes, but a peritoneum that has been mechanically irritated by a tumour is in a more favourable state than a perfectly healthy one." To this my answer was that the simpler the operation the less was the constitutional disturbance suffered by the patient. And the practice of spay-

ing sows and heifers, and the castration of cocks, performed often in the rudest manner, confirms my contention. I am, therefore, unable to agree with Peaslee in his contention, that we should delay operation, lest in a simple case peritonitis should arise. The fact is this, that peritonitis is an exceedingly rare cause of death, and then only because matter is left behind in the cavity to set up irritation. Dr. Marion Sims made this clear to demonstration nine years ago in his admirable paper on ovariotomy, and further experience has only confirmed his conclusions.

Such in fact is the immunity from danger in simple, *i.e.* non-adhesion cases, that Keith has not had a death in such a case during the last nine years, and in my own practice there have been only three,—in one case, death resulting from hæmorrhage due to retraction of a very short pedicle, in one from acute bronchitis, attributable to Listerism, in a subject who had not thoroughly recovered from an attack of pneumonia, and in the third from difficulties connected with the pedicle of a dermoid tumour,—giving a mortality of about 5 per cent. on the total number. And when I state that in not one of the simple cases, even including the fatal ones, was there any evidence of peritonitis, I think I may claim to have demonstrated that Peaslee's dread of peritonitis was not justified.

Nor must it be supposed that the rarity of peritonitis and the generally improved results which the last few years have yielded, are due to the

Listerian method, and that we are justified in operating earlier than formerly. For Keith's records show a remarkable immunity from peritonitis in simple cases both before employment of Listerism and since its discontinuance, and the same result characterises my own practice, as has already been shown. A remarkable commentary on this subject is furnished by Mr. Lister himself, who stated before the International Medical Congress in August last, "that abdominal surgery was not the touchstone of his system....." "Wounds of the peritoneum heal with great rapidity, and that membrane re-absorbs its own exudations with speed and facility; on the other hand, carbolic acid abnormally increases effusion and checks re-absorption,"[1] two conditions favourable to the production of peritonitis.

What then is the proper period for operation? Baker Brown was very strongly of opinion that the operation should be done early, believing "that the risks of the operation become greater every year the disease exists,"[2] and he expressed his strong dissent "from those who advise that no operative proceeding take place until the tumour seriously interferes with the healthy action of the abdominal organs." Amongst more recent writers, Emmet says, "all the advantages are now greatly in favour of an early operation before adhesions have

[1] *Brit. Med. Journal*, October 1, 1881, p. 550.

[2] *On Ovarian Dropsy*, by J. Baker Brown, F.R.C.S., 2nd edit., p. 122-3.

formed."[1] This advice is good as far as it goes. But who is to determine when adhesions are going to form? Who can say, of any particular case.—This patient may go on, say, for three months, six months, one year, without risk? The fact is this, that the risk is ever present, as soon as one is able to diagnose the existence of the tumour, and at any moment the inflammatory process may be lighted up, or the tumour sustain some injury, or suffer one of the accidents on which I have dwelt at such length.

I feel assured that the rule hitherto acted on, in deference to high authority, has been in many cases a disastrous one. Nothing can be more convincing than the evidence I have presented that delay is dangerous.

That many cases will continue to present themselves at an advanced period of the disease is inevitable, and especially in the case of married women who so often mistake ovarian disease for pregnancy. But I entertain a strong hope that my professional brethren will ere long act on the lines I have endeavoured to lay down, that, recognising the inefficacy of all palliative treatment, they will urge their patients to submit to the radical treatment at an early date, and above all cease to resort to tapping.

I would urge, then, with all the force which the strongest conviction imparts, that ovariotomy should

[1] *Principles and Practice of Gynæcology*, by T. Addis Emmet, p. 831.

be performed as soon as we can be sure of the diagnosis; believing, as I do, that, were this rule followed, in only a majority of the cases, the success would be much greater than we are even now able to boast of.

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